Los Angeles River Instream Flow Criteria: Technical Study
Augmentation to Scope of Work and Budget
March 10, 2019

Background

The Los Angeles River Flow Study has two overarching goals. The first is to develop technical tools that quantify the relationship between various alternative flow regimes (which may include seasonal or annual needs for flow, such as presence and depth of pools, temperature, or flow timing, duration, frequency, or magnitude) and the extent to which beneficial uses are achieved. The second is to engage multiple affected parties in application of these tools to inform and solicit input about appropriate flow needs in the Los Angeles River (LA River). The ultimate outcome of this project is to provide technically sound recommendations and alternatives to the Water Boards for consideration and implementation of flow objectives.

A series of scoping meetings involving the State and Regional Water Boards, City and County agencies and land conservancies were held to develop an approach to help address the technical and procedural challenges associated with defining environmental flow targets for the LA River. The resulting scope of work was finalized on September 13, 2018. Subsequent discussions with Mountains Recreation & Conservation Authority (MRCA) and Watershed Conservation Authority (WCA) resulted in an agreement to augment the scope of work to add the following elements:

1. Expansion of hydrologic and hydraulic modeling to include Rio Hondo and Compton Creek to allow consideration of habitat restoration options on these tributaries

2. Addition of a water quality model to evaluate potential water quality effects of changes in wastewater discharge

The augmented scope will also include coordination of additional technical review with subject experts identified by the MRCA and Rivers and Mountains Conservancy (RMC).

Augmented Tasks

Augmentation to Activity 4 to include evaluation of restoration opportunities on Rio Hondo and Compton Creeks. The previously scoped hydrologic and hydraulic models will be expanded to include Rio Hondo and Compton Creek. Additional reaches will be included in the models to allow for evaluation of riparian restoration opportunities to offset flow reductions along these two tributaries. Specific scenarios will be developed in coordination with the MRCA, RMC, and the existing stakeholder advisory group.

Product: evaluation of proposed management scenarios along Rio Hondo and Compton Creek

Activity 7: Assess Water Quality Effects of Flow Modifications on the LA River. We will develop, calibrate, and validate a water quality model for the LA River to evaluate how changes in treated wastewater discharge may affect key water quality constituents. The water quality model will be coupled to the hydrologic model developed under Activity 4 and will have similar spatial resolution. Output from the water quality models will be used to evaluate direct effects of changing wastewater discharge on key water quality parameters and to provide input to the flow-ecology models to allow consideration of potential effects on aquatic species.

Task 7A: Develop, calibrate, and validate water temperature model. A water temperature model will be developed to predict water temperature based on air temperature and river characteristics. Existing temperature models will be evaluated and modified as necessary to accommodate conditions in the LA River and objectives of this study. Temperature observations will be compiled to support model calibration and validation and to demonstrate model performance.

Product: water temperature model and summary of model performance

Task 7B: Develop, calibrate, and validate water quality model for sediment/TSS, specific conductance, salinity, and metals. This task will focus on development of a water quality model to predict non-storm (dry weather) concentrations of suspended sediment (TSS), specific conductance (as a surrogate for salinity) and trace metals. Existing data will be compiled and used for model calibration and validation and to demonstrate model performance. We will focus on dry weather concentrations as the primary model outputs as they are likely the most sensitive to changes in wastewater discharge and are the most relevant for assessing potential effects on aquatic species

Product: water quality model for sediment, specific conductance, and metals and summary of model performance

Optional Task 7C: Develop, calibrate, and validate water quality model for contaminants of emerging concern (CECs). This optional task will focus on developing a model for the priority CECs identified in the report (http://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/692_CECEcosystemsPanelReport_Final.pdf) from the Science Advisory Panel to the State Water Board on CEC monitoring. Available data from wastewater discharge, local city and county monitoring, and results of a current SCCWRP study on CECs in the LA River will be used to calibrate and validate the CEC model focusing on dry weather concentrations of priority CECs. Additional field work is likely necessary to supplement the currently available data.

Product: water quality model for priority class of CECs and summary of model performance

Task 7D: Evaluate effects of changes in wastewater discharge on water quality parameters. The water quality and temperature models developed under the previous tasks will be applied to the scenarios developed under Task 4 to predict potential changes associated with changes in wastewater discharge. Predicted water quality and temperature changes will be included in the species response models to the extent possible based on established species tolerances that have been previously document or published.

Product: water quality and temperature effects of proposed management scenarios.

Updated Project Budget and Schedule

The total cost or all additional tasks under this augmented scope is $277,600 (Table 1). Without, the optional CEC modeling (Task 7C), the total cost is $205,600 ($158,600 for Activity 7 + $47,000 for the expanded scope of Activity 4).

Table 1: Budget for Augmented Tasks

Activity/Task	Cost
Activity 4- Expansion to Rio Hondo and Compton Creek	**$47,000**
Activity 7- Water Quality Assessment	**$230,000**
7A- Temperature Model	$61,800
7B- Sediment, conductance, metals model	$61,800
7C- OPTIONAL- CEC model	$72,000
7D- Evaluate effects of changes in discharge on water quality	$35,000

The additional tasks would extend the overall completion date of the project by six months to Q2 of 2021 (Table 2). Modeling results would be available at the end of the first quarter of 2021, while written products would be released at the end of the second quarter of 2021.

Table 2: Schedule showing augmented tasks. Tasks that have been or updated from the original project schedule are highlighted and marked with an asterisk.

Activity/Subtasks	18 Q4	19 Q1	19 Q2	19 Q3	19 Q4	20 Q1	20 Q2	20 Q3	20 Q4	21 Q1	21 Q2
Activity 1- Stakeholder Coordination	X	X	X	X	X	X	X	X	X	X	X
Activity 2- Non-aquatic Life Use Assessment											
2A Characterize non-aquatic life uses	X	X									
2B Determine flow use relationships		X	X								
Activity 3- Aquatic Life Beneficial Use Assessment											
3A Assess hydrologic baseline	X	X	X								
3B Identify priority ecological endpoints	X	X									
3C Determine flow ecology relationships for stream endpoints		X	X								
3D Determine flow ecology relationships for marsh/estuary endpoints		X	X	X							
Activity 4- Apply Environmental Flows and Evaluate Scenarios											
4A Update hydrologic modeling		X	X	X	X						
4B Analyze tolerances to flow modifications				X	X	X	X	X			
4C Analyze wastewater reuse scenarios			X	X	X						
4D Evaluate stormwater management scenarios					X	X	X	X			
4E Evaluate groundwater interaction scenarios					X	X	X	X			
*4F Evaluate habitat restoration effects						X	X	X	X	X	
4G Evaluate flow alteration effects on tidal portion of LA River	X	X	X	X	X	X	X				
4H Establish recommended flow criteria							X	X	X		
Activity 5- Monitoring and Adaptive Management Plan								X	X		
Activity 6- Summary of results/reporting									X		
***Activity 7- Water Quality Assessment**											
*Temperature model			X	X	X	X					
*Sediment, conductance, metals model						X	X	X	X		
*OPTIONAL- CEC model						X	X	X	X		
*Evaluate changes in water quality parameters								X	X	X	X